

# **ATP III Guidelines**

## **Goals and Treatment Overview**

# Primary Prevention With LDL-Lowering Therapy

## Public Health Approach

- Reduced intakes of saturated fat and cholesterol
- Increased physical activity
- Weight control

# Primary Prevention

## Goals of Therapy

- Long-term prevention ( $>10$  years)
- Short-term prevention ( $\leq 10$  years)

# Causes of Secondary Dyslipidemia

- Diabetes
- Hypothyroidism
- Obstructive liver disease
- Chronic renal failure
- Drugs that raise LDL cholesterol and lower HDL cholesterol (progestins, anabolic steroids, and corticosteroids)

# Secondary Prevention With LDL-Lowering Therapy

- Benefits: reduction in total mortality, coronary mortality, major coronary events, coronary procedures, and stroke
- LDL cholesterol goal:  $<100$  mg/dL
- Includes CHD risk equivalents
- Consider initiation of therapy during hospitalization (if  $\text{LDL} \geq 100$  mg/dL)

# LDL Cholesterol Goals and Cutpoints for Therapeutic Lifestyle Changes (TLC) and Drug Therapy in Different Risk Categories

Risk Category	LDL Goal (mg/dL)	LDL Level at Which to Initiate Therapeutic Lifestyle Changes (TLC) (mg/dL)	LDL Level at Which to Consider Drug Therapy (mg/dL)
CHD or CHD Risk Equivalents (10-year risk >20%)	<100	≥100	≥130 (100–129: drug optional)
2+ Risk Factors (10-year risk ≤20%)	<130	≥130	10-year risk 10–20%: ≥130
			10-year risk <10%: ≥160
0–1 Risk Factor	<160	≥160	≥190 (160–189: LDL- lowering drug optional)

# **LDL Cholesterol Goal and Cutpoints for Therapeutic Lifestyle Changes (TLC) and Drug Therapy in Patients with CHD and CHD Risk Equivalents (10-Year Risk >20%)**

<b>LDL Goal</b>	<b>LDL Level at Which to Initiate Therapeutic Lifestyle Changes (TLC)</b>	<b>LDL Level at Which to Consider Drug Therapy</b>
<b>&lt;100 mg/dL</b>	<b>≥100 mg/dL</b>	<b>≥130 mg/dL (100–129 mg/dL: drug optional)</b>

# **LDL Cholesterol Goal and Cutpoints for Therapeutic Lifestyle Changes (TLC) and Drug Therapy in Patients with Multiple Risk Factors (10-Year Risk $\geq$ 20%)**

<b>LDL Goal</b>	<b>LDL Level at Which to Initiate Therapeutic Lifestyle Changes (TLC)</b>	<b>LDL Level at Which to Consider Drug Therapy</b>
<b>&lt;130 mg/dL</b>	<b><math>\geq</math>130 mg/dL</b>	<b>10-year risk 10–20%: <math>\geq</math>130 mg/dL</b>
		<b>10-year risk &lt;10%: <math>\geq</math>160 mg/dL</b>



# **LDL Cholesterol Goal and Cutpoints for Therapeutic Lifestyle Changes (TLC) and Drug Therapy in Patients with 0–1 Risk Factor**

<b>LDL Goal</b>	<b>LDL Level at Which to Initiate Therapeutic Lifestyle Changes (TLC)</b>	<b>LDL Level at Which to Consider Drug Therapy</b>
<b>&lt;160 mg/dL</b>	<b>≥160 mg/dL</b>	<b>≥190 mg/dL (160–189 mg/dL: LDL-lowering drug optional)</b>

# LDL-Lowering Therapy in Patients With CHD and CHD Risk Equivalents

Baseline LDL Cholesterol:  $\approx$ 130 mg/dL

- Intensive lifestyle therapies
- Maximal control of other risk factors
- Consider starting LDL-lowering drugs simultaneously with lifestyle therapies

# LDL-Lowering Therapy in Patients With CHD and CHD Risk Equivalents

Baseline (or On-Treatment) LDL-C: 100–129 mg/dL

## Therapeutic Options:

- LDL-lowering therapy
  - Initiate or intensify lifestyle therapies
  - Initiate or intensify LDL-lowering drugs
- Treatment of metabolic syndrome
  - Emphasize weight reduction and increased physical activity
- Drug therapy for other lipid risk factors
  - For high triglycerides/low HDL cholesterol
  - Fibrates or nicotinic acid

# LDL-Lowering Therapy in Patients With CHD and CHD Risk Equivalents

Baseline LDL-C: <100 mg/dL

- Further LDL lowering not required
- Therapeutic Lifestyle Changes (TLC) recommended
- Consider treatment of other lipid risk factors
  - Elevated triglycerides
  - Low HDL cholesterol
- Ongoing clinical trials are assessing benefit of further LDL lowering

# **LDL-Lowering Therapy in Patients With Multiple (2+) Risk Factors and 10-Year Risk $\geq 20\%$**

## **10-Year Risk 10–20%**

- LDL-cholesterol goal  $<130$  mg/dL
- Aim: reduce both short-term and long-term risk
- Immediate initiation of Therapeutic Lifestyle Changes (TLC) if LDL-C is  $\geq 130$  mg/dL
- Consider drug therapy if LDL-C is  $\geq 130$  mg/dL after 3 months of lifestyle therapies

# **LDL-Lowering Therapy in Patients With Multiple (2+) Risk Factors and 10-Year Risk $\geq 20\%$**

## **10-Year Risk $< 10\%$**

- LDL-cholesterol goal:  $< 130$  mg/dL
- Therapeutic aim: reduce long-term risk
- Initiate therapeutic lifestyle changes if LDL-C is  $\geq 130$  mg/dL
- Consider drug therapy if LDL-C is  $\geq 160$  mg/dL after 3 months of lifestyle therapies

# LDL-Lowering Therapy in Patients With 0–1 Risk Factor

- Most persons have 10-year risk <10%
- Therapeutic goal: reduce long-term risk
- LDL-cholesterol goal: <160 mg/dL
- Initiate therapeutic lifestyle changes if LDL-C is  $\geq 160$  mg/dL
- If LDL-C is  $\geq 190$  mg/dL after 3 months of lifestyle therapies, consider drug therapy
- If LDL-C is 160–189 mg/dL after 3 months of lifestyle therapies, drug therapy is optional

# **LDL-Lowering Therapy in Patients With 0–1 Risk Factor and LDL-Cholesterol 160-189 mg/dL (after lifestyle therapies)**

## **Factors Favoring Drug Therapy**

- Severe single risk factor
- Multiple life-habit risk factors and emerging risk factors (if measured)



# Benefit Beyond LDL Lowering: The Metabolic Syndrome as a Secondary Target of Therapy

## General Features of the Metabolic Syndrome

- Abdominal obesity
- Atherogenic dyslipidemia
  - Elevated triglycerides
  - Small LDL particles
  - Low HDL cholesterol
- Raised blood pressure
- Insulin resistance ( $\pm$  glucose intolerance)
- Prothrombotic state
- Proinflammatory state